Calibrations Update

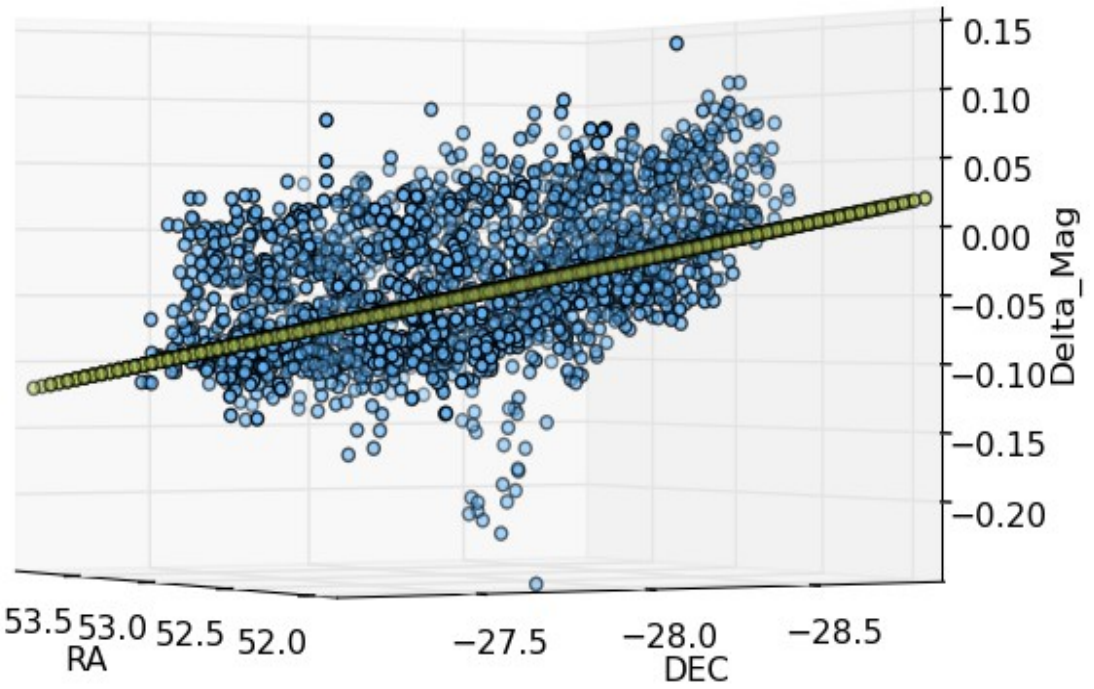
Samuel Wyatt
APSU

- Overview:
  - Search for Dome Occlusions
  - Calibrating SPTE and SPTW
  - SN u band calibrations
  - Update on variable search in Standard Star Fields

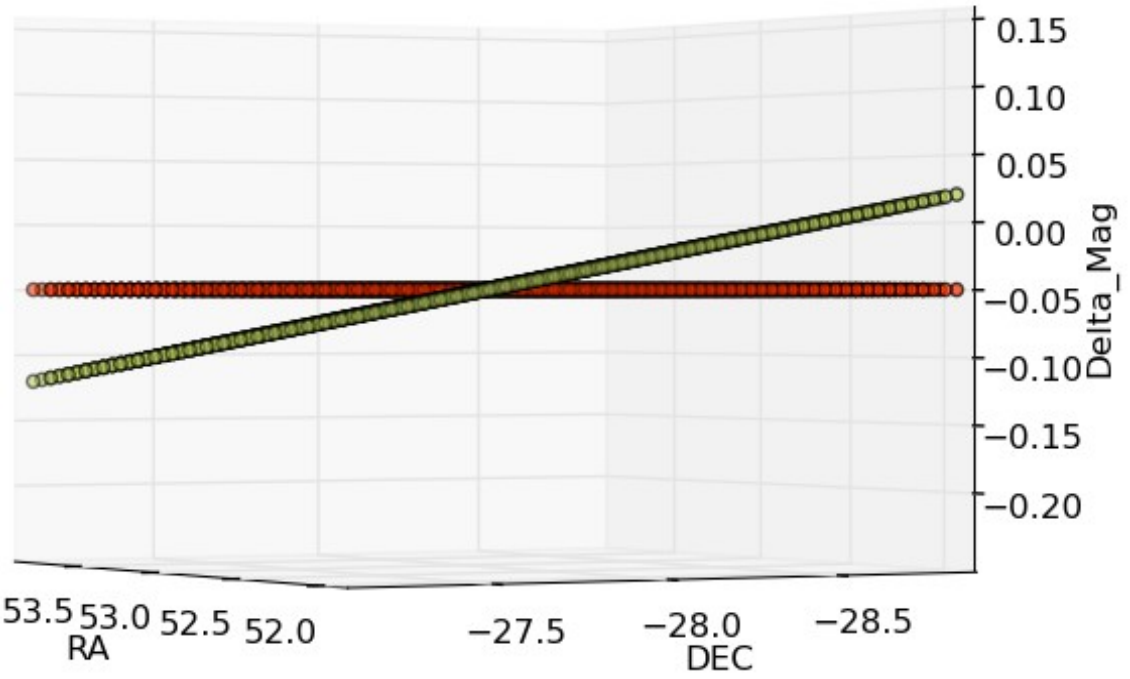
Dome Occlusions

- Dome occlusions are evident when there was a gradient across the plane in a difference in magnitude.
- Each Star field was matched with the SV data from last year that I calibrated, and a difference in magnitude was plotted across the field.
- If there was a noticeable gradient, then that specific exposureID was removed from the field.

Dome Occlusion

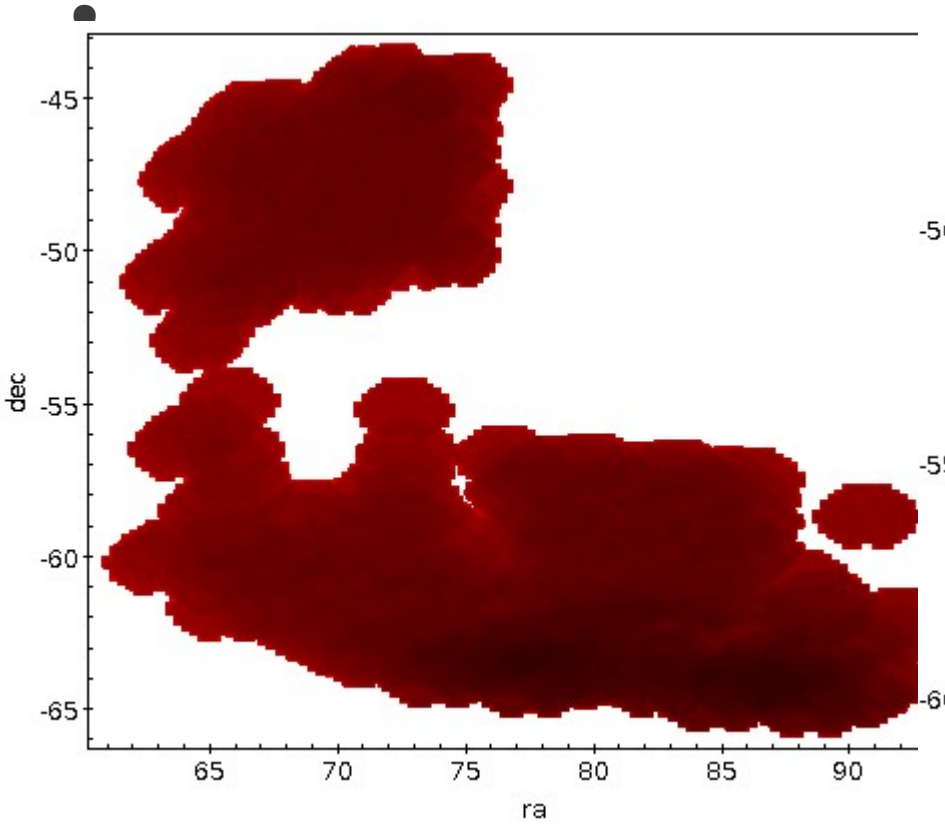


Dome Occlusions

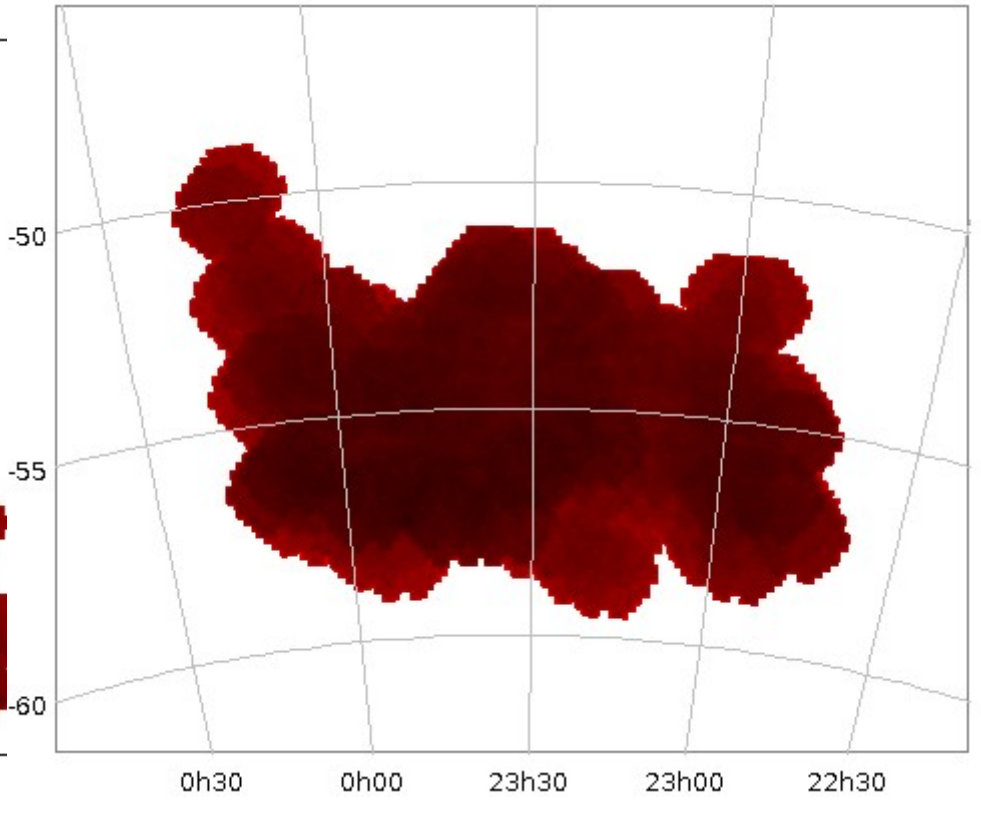


SPTE and SPTW

- I ran my calibration script on the SPTE and SPTW regions, and received good results.

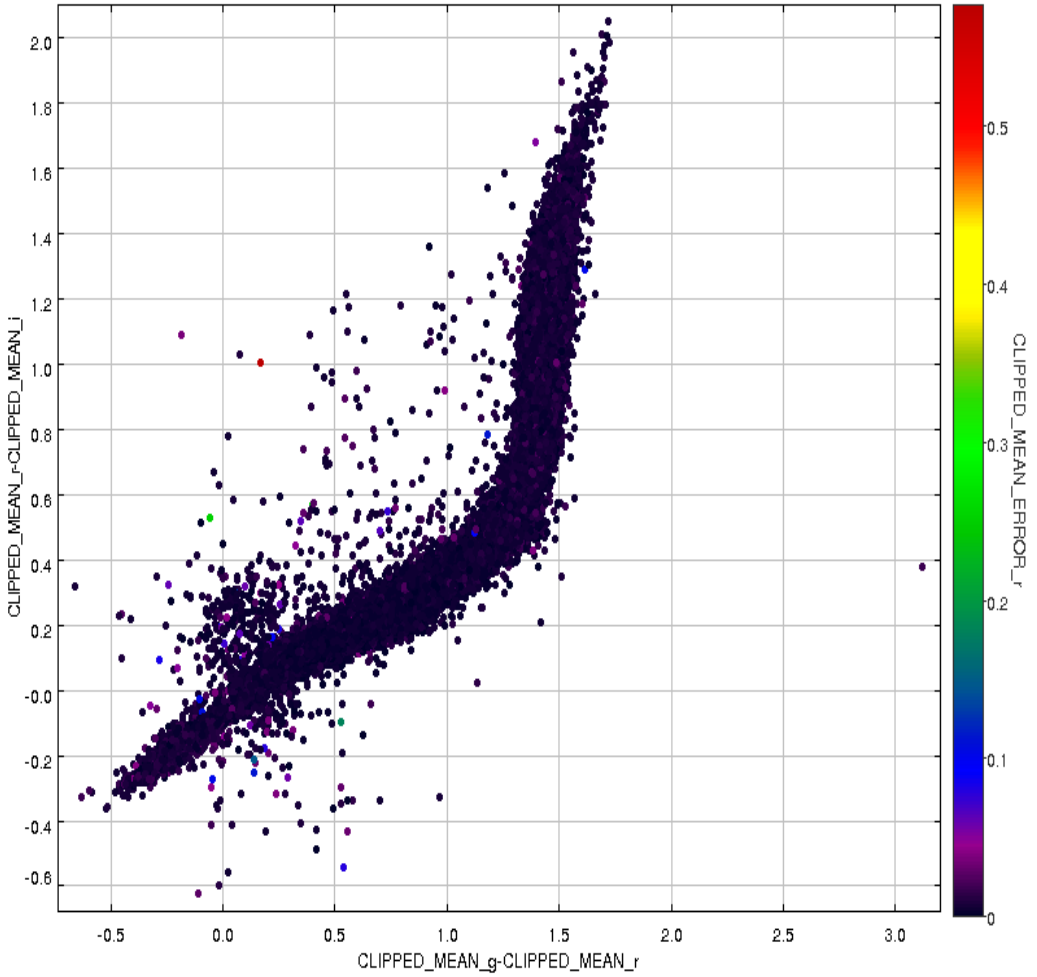


SPTE Y-band

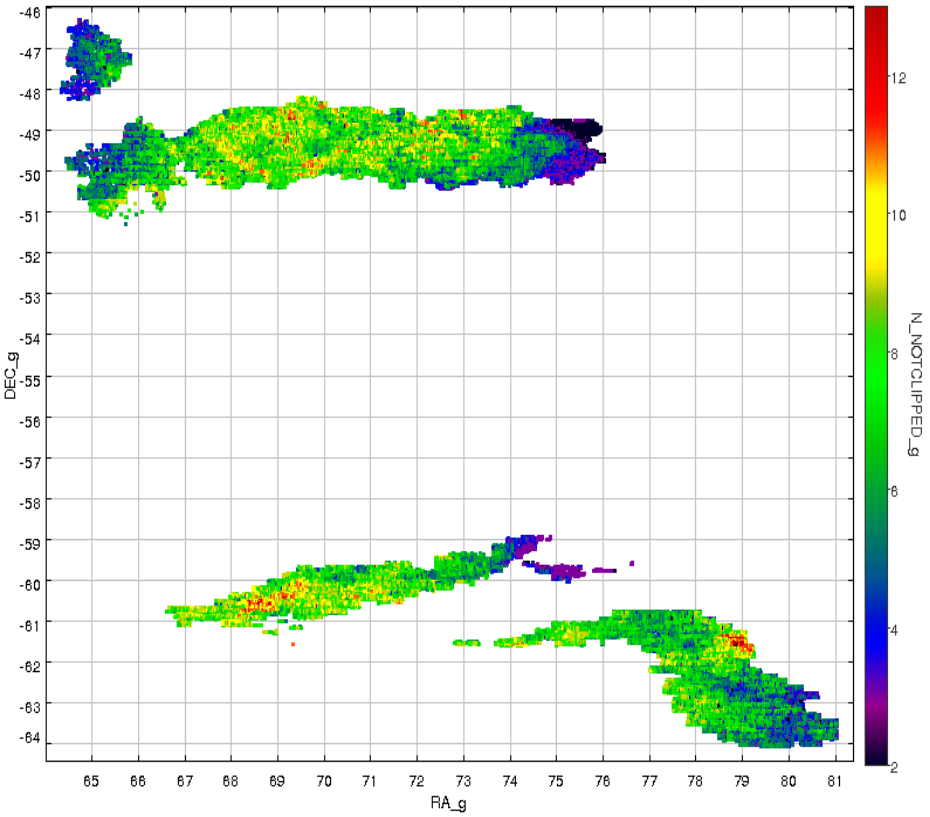


SPTW

SPTE

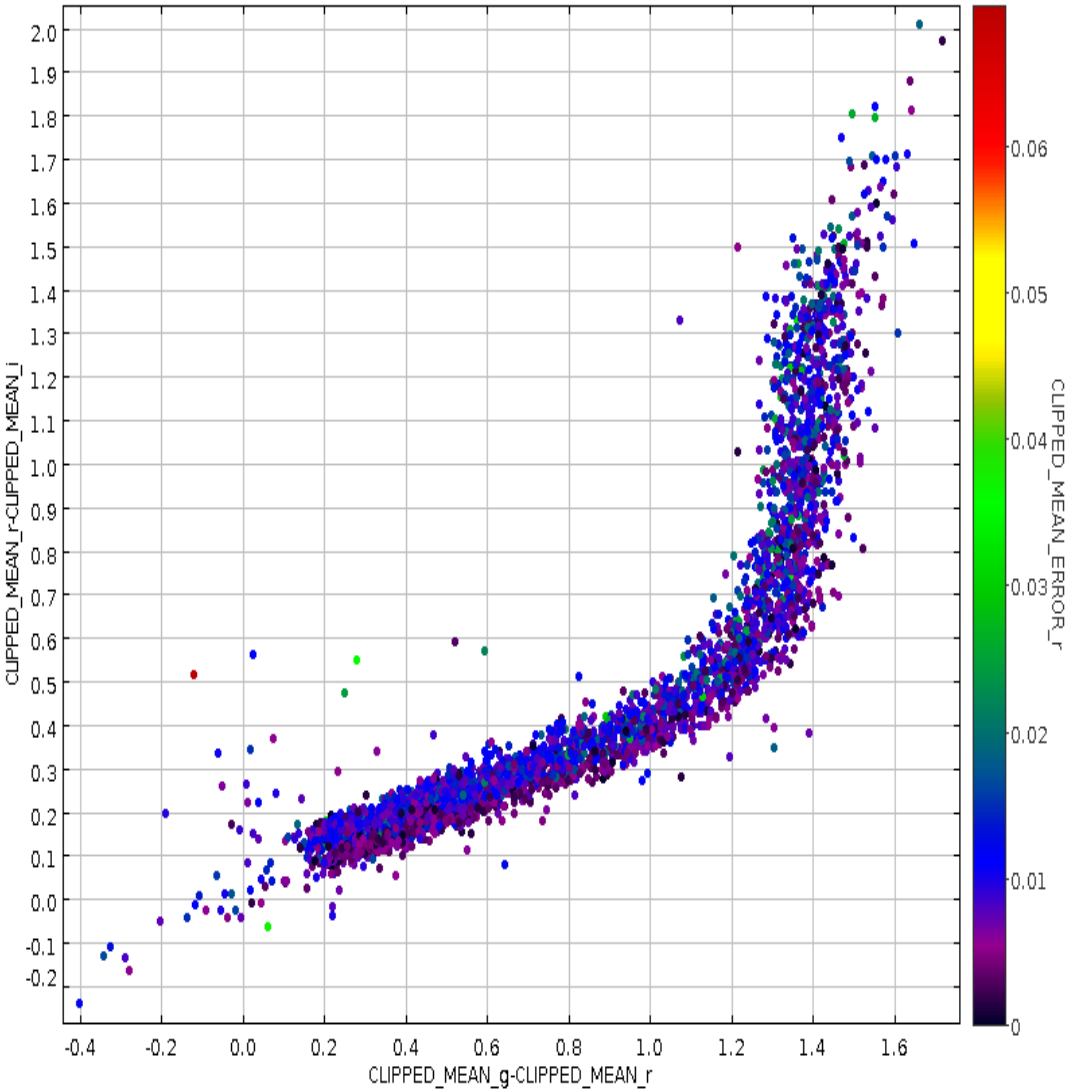


g-r vs r-i

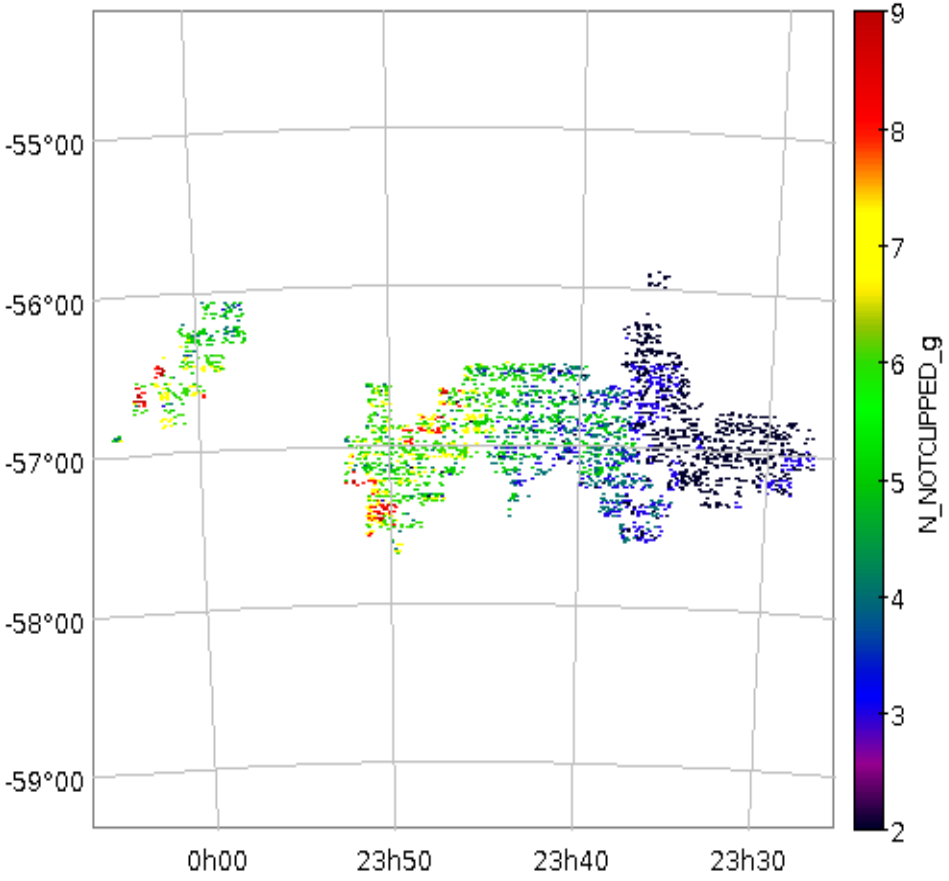


# of matches vs area
In the g-band

SPTW



.g-r vs r-i
Auxillary is the error in the r filter



# of matches in the g band

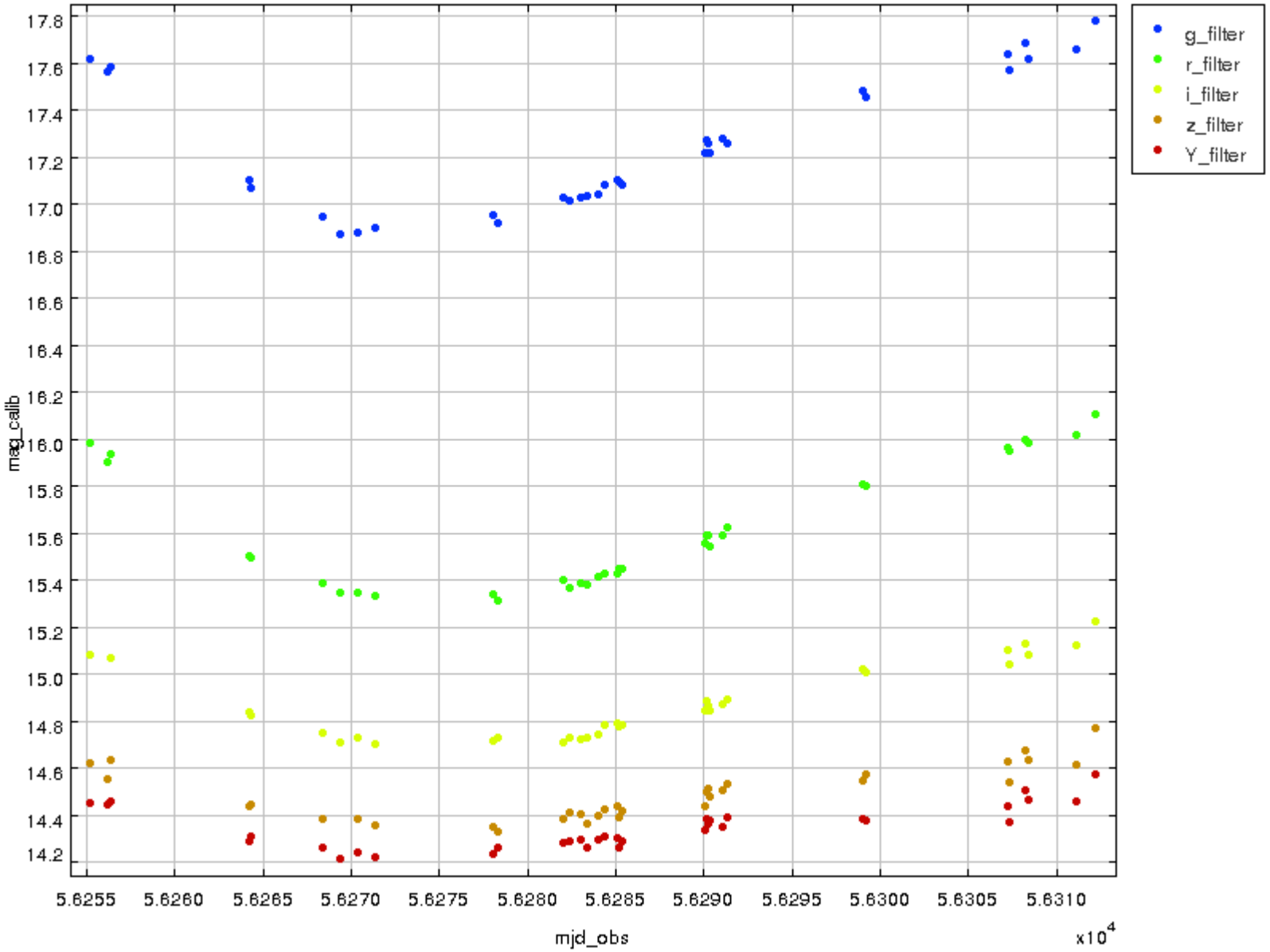
SN u-band

- With the assistance of Douglas Tucker I was able to gather the data for the u band in the following SN fields:
  - SN-C
  - SN-E
  - SN-X
  - *SN-S didn't have data to calibrate
- I was able to Calibrate all fields above and now have calibrated data for the SN(C,E,X) fields in the u-band

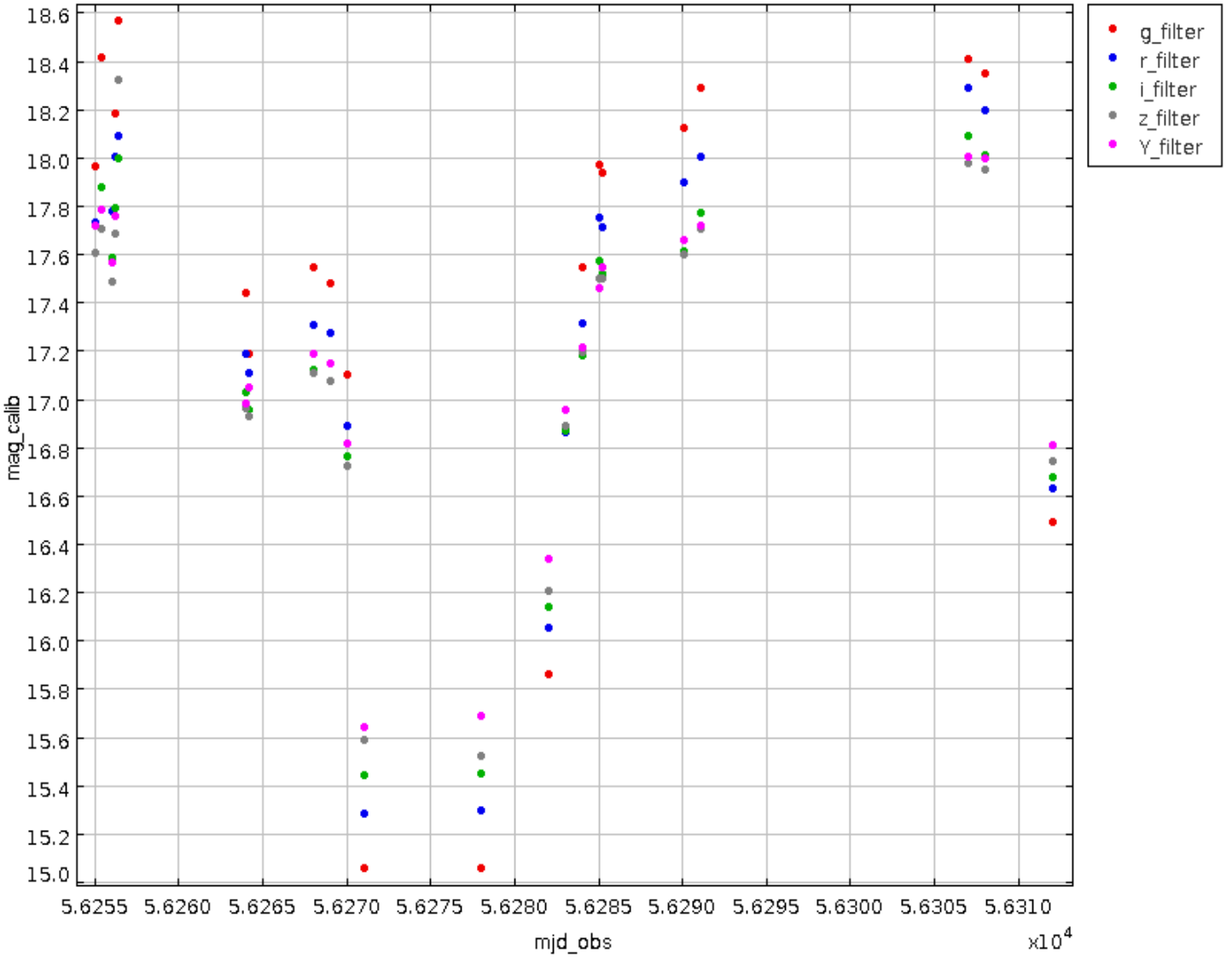
Update with the Variable search in the Standard Star field project.

- I developed a script to parse through the Standard Star fields to find variables.
- Of all the fields I have data for, the code revealed that there is a possibility of having over 100 variable stars.
- Some of the data could be inconclusive due to not having enough observations, or poor data.
- The search is based off of a consistency in standard deviation over time in each filter.

Example of discovered Variable Star



Another example



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- Any questions?
- Thanks for listening